ORIGINAL RESEARCH PAPER
Volume - 11 | Issue - 11 | November - 2022 | PRINT ISSN No. 2277 - 8179 | DOI : 10.36106/ijsr
INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

# FACTORS ASSOCIATED WITH SELF MEDICATION FOR THE TREATMENT OF COVID-19 AND ITS ADVERSE EFFECTS AMONG FACULTY AND RESIDENT DOCTORS IN A MEDICAL COLLEGE HOSPITAL , WEST BENGAL

Medicine

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## ABSTRACT

**Background:** The practice of self medication is not recommended by the WHO in the context of COVID-19. 2 Inappropriate self medication has also shown to lead to adverse drug reactions.3,4 The psychological distress due to the pandemic adds to the incidences of unnecessary and irrational self medication. But practice of self medication seems to be high among doctors and medical students. The study tries to look into the factors associated with self medication. **Methods:** A cross sectional study done on 400 Doctors (including faculty members, junior residents and interns) in a medical college hospital in West Bengal, a questionnaire based study. **Results:** Majority of the subjects who suffered from COVID 19 took self medication for treatment but majority of the self medication did not follow WHO or ICMR guideline, rather they used self medication based on their personal experience or the prescription done by other doctors. As a result, number of medicine consumption was high during self medication, as compared to WHO or ICMR guidelines. Majority of the subjects were not aware about possible adverse effects of all the drugs. Almost 25% subjects had suffered from some mild adverse drug reaction , mostly diarrhea and rashes. There was no serious adverse reaction due to self medication. **Conclusions:** Self medication among doctors and medical undergraduates in this institute was high. Mild symptoms in majority of them and confidence about own knowledge on covid were the primary reason for self medication. But they used more medications than actually needed as per the WHO/ICMR guidelines. Majority have insufficient idea about all possible adverse effects of the drugs.

## KEYWORDS

factors, Self medication, COVID 19, Doctors, Adverse Drug reactions

## INTRODUCTION

SARS -CoV-2 is an RNA virus of the family coronaviridae. It is the etiological agent responsible for COVID-19 which triggered an outbreak towards the end of 2019 in Wuhan, China. Since then, there has been a massive spread of the disease and COVID-19 was declared as a global pandemic on March 11, 2020, by the WHO.

As of January 16, 2022, it has affected 326,879,310 people and caused 5,553,951 deaths.[1] Ever since the beginning, there have been multiple changes in the treatment protocol of COVID-19. We have also witnessed several lockdowns, all across the globe. Due to these reasons, the instances of self medication have been on the rise. Self medication is seen, not only among the general population, but also among healthcare workers and medical undergraduates.

The practice of self medication is not recommended by the WHO in the context of COVID-19. [2] Inappropriate self medication has also shown to lead to adverse drug reactions.[3,4] The psychological distress due to the pandemic adds to the incidences of unnecessary and irrational self medication. Self medication has several disadvantages including antimicrobial resistance.[5]

Studies in the past have shown a high prevalence of self medication among medical undergraduates.[6,7,8] A study conducted in a tertiary care medical college, West Bengal, showed a total of 57.05% students having practiced self medication in the preceding month of the study.[5]

Although studies around the world have shown an increasing trend of self medication among the general population[2,9,10,11] and their use of self medication for COVID-19, there are not enough studies assessing the self medication practices among Indian medical undergraduates and doctors for treatment and/or prophylaxis of COVID-19 and the reasons for opting it. Also, adverse effects due to self medication have not been properly addressed in such studies. There is also a need to assess the factors which influence individuals to start self medication.

So in this study, different factors associated with self medication in Covid-19 were assessed among a population of doctors ( this includes the faculty members, junior residents and interns) in a medical college hospital in West Bengal. Adverse effects due to unnecessary exposure to self prescribed medicines were also addressed in this study. From the results of this study, better education about self medication can be provided to the general population as well as to the healthcare workers.

## METHODS

**1.Type of study:** Analytical type of study

**2. Study design:** A cross sectional study

**3. Study setting**: A medical college hospital in West Bengal

**4. Study duration**: 2 months

**5. Study population**:
Doctors (including faculty members, junior residents and interns) in a medical college hospital in West Bengal.

**6.Sample size**:
The sample size is calculated using a single proportion population formula with a 95% confidence interval:

$$N = z^2 p(1-p) / \varepsilon^2$$

where,N= population size
p= expected prevalence ( in proportion of 1; if 50%,p= 0.5)
z= z score for a level of confidence, ( for the level of confidence of 95%, z value is 1.96)
ε=margin of error ( in proportion of 1; if 5%, ε= 0.05)

Assuming 50% of the population practice self medication( prevalence of self medication = 50%) , with a 5% margin of error; on substituting for the respective values, the estimated minimum sample size is 385.

**Objectives -**

1. To estimate the prevalence of self medication among faculty and resident doctors for treatment of Covid-19.
2. To determine reported reasons and the factors associated with self medication among doctors for treatment of Covid-19.
3. To determine the association between self medication and adverse drug reactions in doctors during the Covid-19 pandemic.
4. To assess the practice of COVID appropriate behaviour among doctors in order to prevent the spread of COVID -19

**Selection criteria**:
**Inclusion criteria:**
The participants will include :
* faculty members, junior residents and interns who will give their consent to participate in the study.

The participants will be of different ages ≥18 years.
Both males and females will be included in the study with an attempt to have an appropriate representation of both sexes.

**Exclusion criteria:**
* refusal to give informed consent to the study.

**Data collection procedures & instruments used**:

A list of probable study participants was made from the administrative records and data were collected with the help of predesigned and pretested schedules during one-to-one interview sessions. The following variables were processed:

- Sociodemographic characteristics:

*age
*sex
*qualification

- History of Symptoms and RT -PCR test for Covid-19 since March 2020.
- Self medication awareness and it's practice.
- Effect of self medication on the subjects.

**Case Study Form**

**A. Subject particulars :**

1. Subject number:
2. Age:
3. Sex:
4. Qualification:
5. Residence: home/ hostel/doctor quarters

**B. Covid-19 and Self Medication:**

1. Have you suffered from Covid? : Yes/No
2. What was your RT-PCR test result? Positive/Negative/Not done
3. Who was your attending physician? : Self/ Others/ N.A
4. What led you to self medicate, if applicable?

*Delay in receiving treatment at health facilities: Yes / No
*No time to visit the doctor :Yes/ No
*Mild symptoms not warranting need to get consultation: Yes/No
*has adequate knowledge about the medicines used in treatment of COVID-19: Yes/ No
*Avoiding doctor's chamber to avoid crowd: Yes/ No
*No confidence in tele-consultation: Yes/ No

5. What was the information source of your medication:
*Prescription
*Medical textbooks
*ICMR/ WHO guidelines
*Previous experience from treating someone
*Others

6. Did you have any symptoms? Yes/No
7. Which of the following symptoms did you experience, if applicable?
*fever
*shortness of breath
*cough
*constipation
*diarrhea
*headache
*anosmia/hyposmia(complete or partial loss of sense of smell)
*myalgia
*sore throat
*runny nose
*lethargy
*others

8. Which of the following drugs did you consume for treatment or prophylaxis for COVID-19?
*Hydroxychloroquine
*Vitamin C
*Vitamin D
*Zinc
*Azithromycin
*Doxycycline
*Amoxicillin- Clavulanic acid
*Ivermectin
*Favipiravir
*Steroids
*Anticoagulants
*Molunapiravir
*Others

9.Where did you buy your medication from?: Pharmacy/ Hospital/Online/Others

10. Did you experience any specific adverse effect after taking medications? If yes, mention the adverse effect.

11. Which drug according to you may have led to such an adverse effect?

12.Did you practise self medication before the COVID-19 pandemic? Yes/No

13. Which of the following protocols did you follow for prevention of COVID-19?
*use of N95/ surgical masks
*use of face shield
*hand washing
*cover mouth and nose while sneezing
*maintaining social distance

**C. Awareness assessment and personal opinion:**

1. Can self medication be harmful? Yes/ No/ I don't know
2. Is self medication for COVID-19 better than seeking consulting other physician? Yes/No/I don't know
3. Do you think that you have taken drugs that were not necessary for COVID-19 treatment or prophylaxis? Yes/No/I don't know
4. Which drug according to you could have been avoided?
5. Were you aware of the adverse drug reactions of every drug you took? Yes/No/I don't know
6. Do you feel drugs were added to the treatment guidelines without enough data on their efficacy and safety? Yes/No/I don't know
7. Are you aware of the burden self medication has on the emerging antibiotic resistance? Yes/No/I don't know

**Ethical consideration:**

prior permission for the study were taken from the Scientific review committee of the institute and the institutional Ethics Committee before recruiting the subjects.

**RESULTS**

We collected response from 400 subjects, 280 medical undergraduates and 120 doctors. Among then 296 subjects (74% of the total subjects) had already suffered from COVID 19. Among the sufferers, 170 subjects (57%) told they himself/herself was their attending physicians and 126 consulted other doctors for COVID.

Among those 170, when asked for What led them to self medicate, 84 subjects told that they had mild symptoms not warranting need to get consultation and 45 persons told that they have adequate knowledge about the medicines used in treatment of COVID-19. 27 opined that there would be delay in receiving treatment at health facilities and 14 subjects had no time to visit the doctor , so they chose self medication.

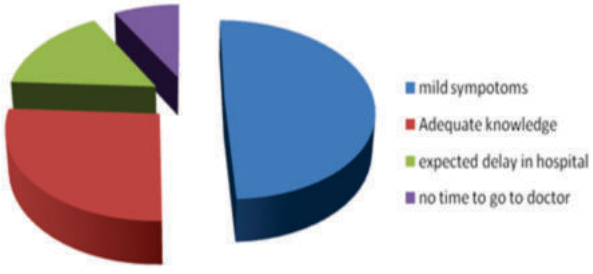
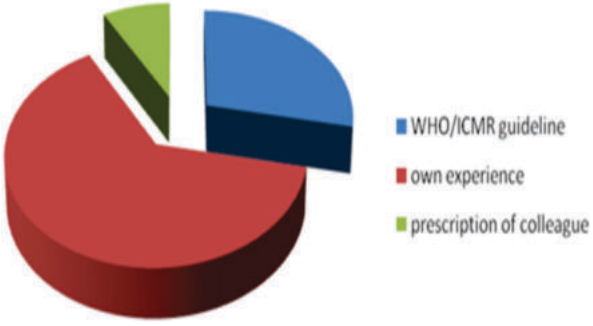



**Table 1: Reasons for self medication among doctors**

About the information source of their medication, 108 out of 170 (63%) told that they followed previous experience from treating someone having COVID, 48 subjects (28.21%) told that they followed ICMR/ WHO guidelines and 14 followed prescription by other colleagues for covid None had actually followed Medical textbooks .




**Tble 2: infomation source for self medication**

While asking Which of the following drugs did you consume for treatment or prophylaxis for COVID-19 among the 400 subjects,
*Hydroxychloroquine was consumed by 231,
*Vitamin C was consumed by 342,
*Vitamin D was consumed by 118,
*Zinc was consumed by 314,
*Azithromycin was consumed by 122,
*Doxycycline was consumed by 304,
*Amoxicillin- Clavulanic acid was consumed by 81,
*Ivermectin was consumed by 128,
*Favipiravir was consumed by 14,
*Steroids was consumed by 52,
*Anticoagulants ( Rivaroxoban/ dabigatran) was consumed by 21,

The subjects who practiced self medication, 152 bought their medicine from Online pharmacy and 18 bought from private local pharmacies. None bought them from hospital pharmacy. 34 Subjects ( 20%) had experienced any specific adverse effect after taking medications. Diarhoea and rash was more common adverse effects. Doxycycline and amoxicillin clavlanic acid was the suspected drug causing diarrhoea . 142 subjects agreed that they did not have idea about adverse effects of all drugs they received during Covid. 41 Subjects told they practised self medication before the COVID-19 pandemic also.

## DISCUSSION

In our **s**tudy, majority of the subjects who suffered from COVID 19 took self medication for treatment and most of them chose that because they thought that they had enough knowledge to treat themselves as they have been treating the disease for almost 2 years. Few doctors and medical undergraduate took opinion of other doctors those are not practicing at medicine specialities. In this study it was seen that majority of the self medication did not follow WHO or ICMR guideline, rather they used self medication based on their personal experience or prescription by other doctors. As a result, number of medicine consumption was high during self medication, as compared to WHO or ICMR guidelines.

Majority of the subjects were not aware about possible adverse effects of all the drugs, which should not be expected from doctors. Almost 25% subjects had suffered from some mild adverse drug reaction, mostly diarrhea and rashes. There was no serious adverse reaction due to self medication. It is also revealed that they had practiced self medication even before covid pandemic.

This study aims to determine the factors associated with self medication and its adverse effects to help promote awareness about safer and appropriate practices among doctors as well as medical undergraduates.

It also aims to prevent the emerging antibiotic resistance due to irrational self medication.[12] As doctors are aware of the seriousness of antibiotic resistance, information about how self medication can lead to it and therefore being a contributor to solving this emerging crisis is of utmost importance.

This can be done through group discussions, conferences or curriculum modifications. The study will also help in assessing the awareness and practice of self medication for treatment of COVID-19 among them. The study aims to assess the burden of adverse drug reactions due to self medication and act as a precedent to help implement stricter norms in order to reduce the same.

It will also assess their adherence to preventive measures and thereby their active participation in control of communicable diseases at the primary level. Since the doctors play a pivotal role in educating the society on how to adopt safe health practices, especially during pandemic, it is very important to assess any precautionary lapses within this community and promote its resolution for the welfare of the society as a whole.

## CONCLUSIONS:

Self medication among doctors and medical undergraduates in this institute was high. Mild symptoms in majority of them and confidence about own knowledge on covid were the primary reason for self medication. But they used more medications than actually needed as per the WHO/ICMR guidelines. Majority have insufficient idea about all possible adverse effects of the drugs. This need further education among them regarding adverse effects of commonly used drugs for covid and contraindications of those drug to practise safe medication.

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